## Registration Form

**Name:** _____

**Designation:** _____

**Qualification:** _____

**Experience:** _____(if applicable)

**Department:** _____

**Address for Communication:**
_____

_____

**City:** _____ **Pin Code:** _____

**Mobile No.:** _____

**E-mail:** _____

**Category of Participant:**

☐ **Faculty/Student/Research Scholar of NITK**

☐ **Faculty/Student/Research Scholar outside NITK**

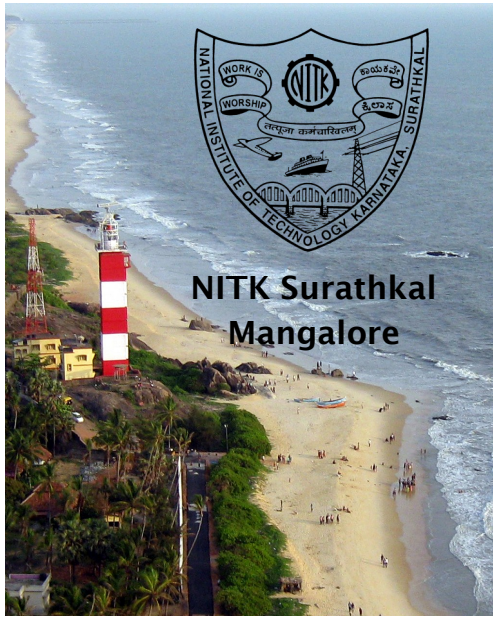
☐ **Industry Participant**

I agree to attend the course for the entire duration.

**Place:**

**Date:** **Signature of the Applicant**

***Note:*** *On attending the course "in full"", the participants will be given participation certificate.*




## Address for Correspondence

**K. Chandrasekaran**
Professor, Department of CSE,
National Institute of Technology Karnataka, Surathkal, Srinivasnagar PO, Surathkal, Mangalore 575025 , Karnataka, India.
**Phone:** +91-824 2474000 Extn 3400
**Fax:** +91-824 2474033
**Email:** techevents.cse@gmail.com

### Point of Contact

- Marimuthu C, *Research Scholar* (+91-9008581809)
- Raghavan S, *Research Scholar* (+91-7338513541)

# PRACTICAL BIOLOGICAL SIGNAL ANALYSIS

GIAN (MHRD, Govt. of India)
Supported Advanced Level course

***Organized at***

**NITK Surathkal, Mangalore**

***Supported by***

**Global Initiative of Academic Networks (GIAN)**

Government of India
Ministry of Human Resource Development

**Date**: November 21-25, 2016
**Venue**: NITK Surathkal

GLOBAL INITIATIVE OF ACADEMIC NETWORKS

http://cse.nitk.ac.in/upcoming-events/gian/bio-signal-analysis

# PRACTICAL BIOLOGICAL SIGNAL ANALYSIS

GIAN (MHRD, Govt. of India) Supported
Advanced Level course @ NITK Surathkal

## Course Overview

The aim of this course is to provide attendees with a fundamental understanding of signal processing techniques and classification algorithms for analysing biological signals. The course will allow the attendee to demonstrate understanding of basic principles of digital signals; awareness of physiology and characteristics of different biological signals; describe and apply pre- and post- processing techniques, such as conditioning, filtering, feature extraction, classification and statistical validation techniques for biological signals and solve practical biological signal analysis problems using the industry standard software, MATLAB.

The main strength of the course is that it will discuss all four related sections to biological signal analysis: signal preprocessing, feature extraction, classification algorithms and statistical validation methods.

## Course Contents

1. Introduction to biological signal analysis
2. Discrete-time signals and systems
3. Introduction to Matlab with exercises
4. Spectral analysis
5. Signal conditioning
6. Digital filtering
7. Matlab exercises: *introducing ECG signals, reducing noise from ECG signals, analysing ECG spectral content and filtering*
8. Feature extraction
9. Classification
10. Matlab exercises: feature extraction, classification of EEG signals
11. Mini group project: *Attendees to work on real world problem solving exercise involving ECG signal*

## Teaching Faculty

**Dr Palaniappan Ramaswamy** is currently a Reader in the School of Computing, University of Kent, which is a top 20 UK university. His research interests include biological signal processing, brain-computer interfaces, biometrics, neural-networks, genetic-algorithms, and image processing. To date, he has written three text books in engineering and published over 150 papers (with over 2000 citations) in peer-reviewed journals, book chapters, and conference proceedings. He is a senior member of the Institute of Electrical and Electronics Engineers and member in Institution of Engineering and Technology. He is also the Editor-in-Chief of International Journal of Cognitive Biometrics and editorial board member for several international journals. He also serves in the prestigious Peer Review College for UK Research Councils and many other international grant funding bodies. He has supervised more than half a dozen postgraduate students to completion and has more than 18 years of multi-disciplinary teaching experience in computer science and engineering (electrical and biomedical) disciplines. His pioneering work on revolutionary new areas of brain-computer interfaces and emerging biometrics has not only received international awards and recognition by the scientific community but also from the media and public. His international research collaborations on signal processing and machine learning include among others institutions from Canada, China, India, Malaysia and Singapore.

## Important Dates

| | |
|---|---|
| **Registration Starts** | 21/10/2016 |
| **Registration Closes** | 10/11/2016 |
| **Selection Notification** | 11/11/2016 |
| **Event Date** | 21/11/2016 to 25/11/2016 |

## Registration Details

**Participants from**

| | |
|---|---|
| **Industry / Research Organizations** | Rs. 10,000/- |
| **Academic Institutions** | Rs. 5,000/- |

***Note**: Faculty / student of NITK will be admitted at free of cost.*

**Payment Mode:** As **Demand Draft (DD)** in favor of ***COMSIM***, payable through any nationalized bank at Surathkal / Mangalore.

*Scanned DD and the Duly filled Registration form must be uploaded during the online registration on or before Nov. 10, 2016.*

**Max. no. of Participants**: Limited to 50

**Registration Link:** *http://www.cse.nitk.ac.in/upcoming-events/gian/bio-signal-analysis/registration*

The above fee includes all instructional materials, computer use and internet facility. The participants will not be given any TA/DA. Participant can bring their laptop for effective utilization of course delivery.

**Accommodation:** Shared accommodation can be arranged to the registered participants on request in NITK Guest house or International Hostel (FCFS basis). However, participants are informed that Hotel accommodation is also available at Surathkal or Mangalore City.